OPERATING NOTE

3441A

RANGE SELECTOR

Serials Prefixed: 314-

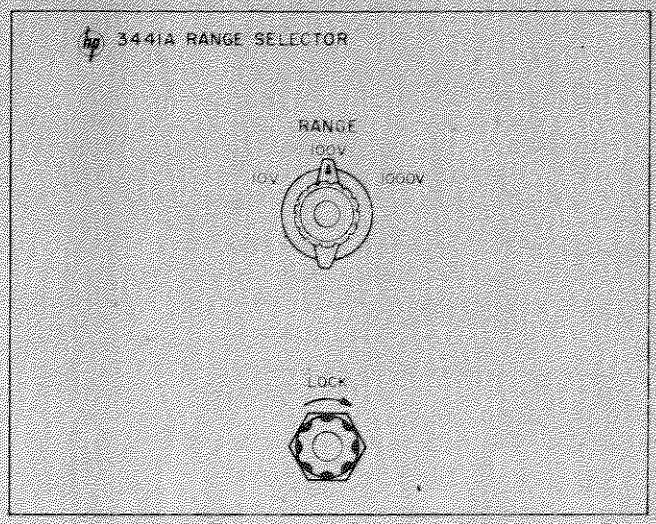

Figure 1. Model 3441A Range Selector

1. DESCRIPTION.

2. The Model 3441A Range Selector is the basic plug-in for the Model 3440A Digital Voltmeter. The unit provides manual range selection, and completes circuits which terminate on the plug-in connector. Figure 1 illustrates the Model 3441A. Figure 2 is a schematic diagram showing the plug-in circuits, and includes a portion of the circuits of the Model 3440A Voltmeter.

3. OPERATING INSTRUCTIONS.

4. INSTALLATION. Slide the Model 3441A into its compartment in the cabinet of the Model 3440A Digital Voltmeter. Tighten the LOCK screw to assure that firm electrical contact is maintained, and to prevent the plug-in unit from sliding out when the Voltmeter is tilted forward.

5. RANGE SELECTION. The front-panel RANGE switch on the Model 3441A selects the 10-, 100-, or 1000-volt range, moving the decimal point in the four-digit Voltmeter read-out window accordingly. If the range selected is too high, a zero will appear in the left-hand place. In this case, switch to the next lower range. If the range is too low, the OVER-RANGE light will light in the read-out window. Switch to the next higher range, unless the measured voltage is within the instrument's 5% over-range capability.

6. CIRCUITS.

7. The circuit diagram of the Model 3441A Range Selector is shown in Figure 2. It consists of RANGE switch S1, which feeds range information to the Voltmeter and Recorder, diode CR1, which couples OVER RANGE information to the Recorder function through R2 and R3, resistor R1, and jumpers to complete Voltmeter circuits.

8. Input DC voltage is transferred through terminals 25 and 50 in the plug-in to the input attenuator in the Voltmeter. Terminal 50 delivers the input voltage for the 10-volt range, terminal 23 for the 100-volt range, and terminal 21 for the 1000-volt range, with appropriate attenuation in each case so that the input to the comparator is always in the 10-volt range. Although the Voltmeter is always reading out the 10-volt range, decimal information is fed to the Voltmeter and Recorder, which display the true level of the input voltage.

9. Decimal information to the Voltmeter is fed via terminals 1 and 2 and causes the decimal to be placed in left, center or right position, as determined by the RANGE switch setting. Terminals 16, 35 and 43 pass corresponding decimal information to the Recorder and terminals 33 and 34 supply function information to the Recorder. Terminal 38 supplies polarity information to the Recorder. Information through terminal 3 allows the Voltmeter readout "V" function light to light.

10. Terminals 5 and 30 are jumped together and supply -150 volts to light the polarity indicator. Terminal 13 supplies polarity information to the plug-in, and terminal 9 supplies over-range information to diode CR1. The over-range information to CR1 overrides the polarity information and activates A, B, and C function lines to the Recorder to indicate over-range. The print inhibit line is grounded at terminal 19 and the Recorder is now controlled by Voltmeter print command pulses.

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